

NHANES 1999-2000 Public Release Data File (February 2003)

Lab28POC: Polychlorinated Dibenzo-p-dioxins (PCDDs), Dibenzofurans (PCDFs), Non-ortho Substituted or Coplanar Polychlorinated Biphenyls (cPCBs), Other Polychlorinated Biphenyls (PCBs), Persistent Chlorinated Pesticides and Selected Pesticide Metabolites

Description

Polychlorinated Dibenzo-p-Dioxins (PCDDs), Dibenzofurans (PCDFs), Non-ortho Substituted or Coplanar Polychlorinated Biphenyls (cPCBs), Other Polychlorinated Biphenyls (PCBs), Persistent Chlorinated Pesticides and Selected Pesticide Metabolites

Organochlorines are diverse, synthetic chemicals that are persistent in the environment and tend to bioaccumulate. Most of these chemicals are banned in the U.S.

Assessment of exposure to persistent organochlorines in a representative sample of the U.S. population is needed to determine current prevalence and level of exposure and the potential for human health threat from exposure to these chemicals.

Eligible Sample

Participants aged 12 years of age and older.

Data Collection Methods

Serum specimens are processed, stored, and shipped to the Division of Environmental Health Laboratory Sciences, National Center for Environmental Health, Centers for Disease Control and Prevention for analysis.

Examination Protocol

Detailed specimen collection and processing instructions are discussed in the NHANES Laboratory/Medical Technologists Procedures Manual (LPM). Vials are stored under appropriate frozen(- 20 degrees Centigrade) conditions until they are shipped to National Center for Environmental Health for testing.

Analytic Methodology

Substituted or Coplanar Polychlorinated Biphenyls (cPCBs), Other Polychlorinated Biphenyls (PCBs), Persistent Chlorinated Pesticides and Selected Pesticide Metabolites

These analytes are measured in serum by high-resolution gas chromatography/isotope-dilution high-resolution mass spectrometry (HRGS/ID-HRMS). Serum samples are spiked with $^{13}\text{C}_{12}$ -labeled internal standards and the analytes of interest are isolated using either a C_{18} solid phase extraction (SPE) or liquid-liquid extraction procedure followed by a multi-column automated cleanup and enrichment procedure. The analytes are chromatographed on a DB-5 ms capillary column (30m x 0.25 mm x 0.25 μm film thickness) using a Hewlett-Packard 6890 gas chromatograph and selected analytes quantified by ID-HRMS using selected ion monitoring (SIM) at 10,000 resolving power using either a Micromass AutoSpec ULTIMA or Finnigan MAT95 mass spectrometer in the EI mode. The concentration of each analyte is calculated from an individual standard linear calibration. Each analytical run is conducted blinded and consists of three unknown serum samples, a method blank, and a quality control sample. Detection limits, on a whole-weight and lipid-adjusted basis, are reported for each sample, corrected for sample weight and analyte recovery.

Analytic Notes

Measures of polychlorinated dibenzo-p-dioxins (PCDDs), dibenzofurans (PCDFs), non-ortho substituted or coplanar polychlorinated biphenyls (cPCBs), other polychlorinated biphenyls (PCBs), persistent chlorinated pesticides and selected pesticide metabolites are assessed in participants aged 12+ years on a one-third subsample.

Use the special weights included in this data file when analyzing data. Read the “Special Sample Weights for this Dataset” information provided before beginning analysis.

Detection limits

The detection limit was variable for all of the analytes in the data set. Two variables are provided for each of these analytes. The variable named LBD__LC indicates whether the results was below the limit of detection. There are two values: “0” and “1”; “1” indicates that the result was below the limit of detection. The other variable named LBX__ provides the analytic result for that analyte. In cases, where the result was below the limit of detection, the value for that variable is the detection limit divided by the square root of two.

Special Sample Weights for this Dataset

Special sample weights are required to analyze these data properly. Please check the Analytic Guidelines posted for the file on the NHANES website.

Special Notes for this Dataset

The analysis of NHANES 1999-2000 laboratory data must be conducted with the key survey design and basic demographic variables. The NHANES 1999-2000 Household Questionnaire Data Files contain demographic data, health indicators, and other related information collected during household interviews. The Household Questionnaire Data Files also contain all survey design variables and sample weights required to analyze these data. The Phlebotomy Examination file includes auxiliary information on duration of fasting, the time of day of the venipuncture, and the conditions precluding venipuncture. The Household Questionnaire and Phlebotomy Exam files may be linked to the laboratory data file using the unique survey participant identifier SEQN.

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